

## REMARKS

### STATUS OF CLAIMS

Claims 1-26 and 32-47 are pending in the present application and are subject to a restriction/election requirement. Claims 6 and 45-47 have been amended; no new matter has been added. Support can be found at least in the specification as originally filed.

### PRELIMINARY COMMENTS

Because the Examiner has re-issued the restriction requirement mailed on December 14, 2009 and incorporated it into the June 8, 2010 Office Action, it is not clear to Applicants whether the claim amendments presented in Applicants' March 12, 2010 response were entered or whether Applicants arguments presented therein were considered. Consequently, the claims presented with the present response include the amendments previously made. In other words, claims 45-47 are shown as being currently amended. In addition, Applicants repeat herein their arguments submitted with the March 12, 2010 response to ensure that the Examiner has fully considered them.

### RESTRICTION REQUIREMENT

The Examiner has restricted the application as follows:

Group I: Claims 1-26, 32-44, drawn to a protein separation device; and

Group II: Claims 45-47, drawn to methods of isolating and identifying at least one protein from a biological sample.

The Examiner stated that the inventions listed do not relate to a single general inventive concept under PCT Rule 13.1 as they lack the same or corresponding special technical features as the common technical feature linking groups I and II, namely a protein separation device comprising a chaperone protein immobilized on a substrate, as evidenced in the prior art *Protein Expression and Purification*, Nam et al., vol. 24, pp. 282-291. The Examiner stated because the common linking feature fails to contribute a finding over the prior art, a lack of unity exists between groups I and II.

Applicants provisionally elect Group I (claims 1-26 and 32-34) again with traverse. Applicants respectfully request that the Examiner reconsider Applicants' response filed on March 12, 2010, the arguments of which are repeated below.

Specifically, Applicants respectfully maintain that the claims do indeed relate to a single general inventive concept for two reasons. First, because the method claims specifically recite the separation product of claim 1, they contain all the limitations of the product claim. Thus, they relate to a single general inventive concept. Claims 45-47, as originally presented, recite a chaperone protein immobilised on a substrate. This corresponds to the protein separation device according to claim 1 comprising a chaperone protein immobilised on a substrate. 37 CFR 1.475(b) provides, in pertinent part, that:

An international or national stage application containing claims to different categories of invention will be considered to have unity of invention if the claims are drawn only to one of the following combinations or categories:

...

(2) A product and a process of use of said product....

As method claims 45-47 specifically recite using the product of claim 1, the claims are directed to a process of using the product and contain all of the limitations of the product claim. Thus, they do relate to a single general inventive concept under PCT Rule 13.1 and do possess unity of invention under 37 CFR 1.475(b). Applicants therefore respectfully request withdrawal of the requirement for restriction.

Second, as discussed in detail in Applicants' March 12, 2010 Response, the common technical feature linking Groups I and II, namely a protein separation device comprising a chaperone protein immobilized on a substrate, is **not** evidenced in the prior art *Protein Expression and Purification*, Nam et al., vol. 24, pp. 282-291. Rather, as Applicants discuss in detail below, Nam et al. teaches the **opposite** configuration as claimed by Applicants.

Nam does not disclose a protein separation device comprising a chaperone protein immobilised on a substrate, as claimed. Indeed, at page 282, second column, Nam states:

An ideal situation would be to immobilize molecular chaperones to enhance a protein folding but this may not be possible because the cascade or concerted action exhibited by chaperones and the oligomeric compositions of GroES and GroEL. (emphasis added)

Nam explains that the objective of their research was to affinity-purify molecular chaperones from *E. coli* cell lysates using immobilized  $\beta$ -CN (see Nam at page 283, second column). In Nam,  $\beta$ -CN was immobilised on the column and used to capture the chaperone protein. The chaperone protein was then eluted from the column to purify the chaperone protein. As explained in Nam (page 284, first and second columns) cold water (4°C) or 1 mM Mg-ATP in water was applied to dissociate interactions between  $\beta$ -CN and chaperones so that the chaperone protein would be eluted from the column.

Thus, Nam teaches the opposite configuration to the presently claimed invention. In Nam, the chaperone proteins were not immobilised on the column, in contrast to the present claims which require immobilisation of the chaperone. Indeed, in Nam the chaperones could not have been immobilised on the column or it would not have been possible to elute them using cold water or ATP. Unlike the present invention, Nam was not using the chaperone proteins to separate other proteins but rather was using a column to isolate the chaperone proteins themselves.

In this regard, solely by way of illustration, the Examiner is directed to Example 2 in the present specification wherein biotinylated GroEL was conjugated onto NeutrAvidin beads which were then packed into a column. Denatured human serum was applied to the column and proteins bound to the immobilised GroEL were eluted from the column with buffer W supplemented with 3 mM ATP. This is of course completely different from Nam in which ATP was used to release the chaperones which were not immobilised on the column.

Thus, Nam *et al.* does not teach or suggest a protein separation device or method of using such a device as presently claimed, and therefore the claims possess unity of invention over Nam.

Reconsideration and withdrawal of the requirement for restriction between Groups I and II is respectfully requested.

The Examiner also required election of species as follows:

Species presented in claims 5, 6, and 9 – claim 4 being generic; and

Species presented in claims 17, 18, and 19 – claim 16 being generic.

Applicants elect the species of claim 6 without traverse. Claims 1-4, 6-26 and 32-44 read on the elected species. Applicants also elect the species of claim 17, without traverse. Claims 1-17, 20-26 and 32-44 read on the elected species.

### CONCLUSION

All rejections having been addressed, Applicants respectfully suggest that all claims are now allowable over the prior art of record and a Notice of Allowance is earnestly solicited. If the Examiner believes that a teleconference would be of value in expediting the allowance of the pending claims, the undersigned can be reached at the telephone number listed below.

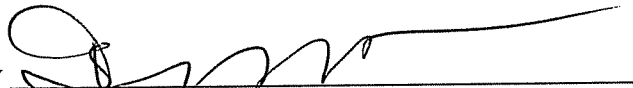
Applicants hereby petition for a four-month extension of time, the one-month statutory period having expired on July 8, 2010 and the present response being filed on or before November 8, 2010. The Commissioner is hereby authorized to charge or credit any such extension fees or overpayment to Deposit Account No. 50-1901 (Reference #490352-3004/US).

Dated: 11/5/10

Respectfully submitted,

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